Honeywell

MS4980

Area Imaging Scanner

Installation and User's Guide

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Introduction

Product Overview

The MS4980 is a high performance area imaging bar code scanner packed into a small yet rugged form factor. The scanner features a high-resolution CMOS imaging sensor to deliver excellent omnidirectional 1D, PDF417 and 2D bar code scan performance, optical character recognition (OCR) and image capture. Built with small size in mind, the MS4980 includes important features for everyday scanning operation such as:

- IR object detection or manual button activation
- High density bar code scanning with a large depth of field
- Aggressive mobile phone & LCD scanning
- Integrated mounting points
- Rugged interface cable connection
- Automatic detection and configuration for RS232, USB and Keyboard Wedge interfaces

Honeywell adds value and functionality to the MS4980 by incorporating our Flexible Licensing Solution and TotalFreedom™ platform, ensuring that the product easily aligns the customer's current and future scanning needs.

Model	Interface
MS4980 - 124	Interfaces supported include: • RS232 • Keyboard Wedge • USB◆
◆ *Configurable for Keyboard Emulation Mode or Serial Emulation Mode. The default setting is Keyboard Emulation Mode.*	
Note: Standard models ship with the ability to read all 1D, PDF and 2D bar codes. Decoding and functional capability is limited and units will not support key features including, but not limited to, the ability to decode PDF, 2D or OCR fonts without proper limited use licenses provided by Honeywell. If you wish to purchase a limited license for one or more of the key features not included in the standard unit, please specify at the time of sale or otherwise contact a customer service representative for more information.	

Basic Kit

Part #	Description
MS4980	Area Imaging Bar Code Scanner
00-02544	MetroSelect® Single-Line Configuration Guide*
00-05252	Area Imaging Bar Code Scanner Supplemental Configuration Guide*
70-79037	MS4980 Scanner Installation and User's Guide*

**Available for download from www.honeywellaidc.com*

Optional Accessories

Part #	Description
AC to DC Power Transformer – Regulated 5.2VDC @ 1A output.	
46-00525	120V United States
46-00526	220V-240V Continental European
46-00870	220V-240V United Kingdom
46-00528	220V-240V Australia
46-00529	220V-240V China
Communication Cable	
52-52557*x*-3-FR	RS232 straight PowerLink cable, with ferrite, black
52-52558*x*-3-FR	Keyboard Wedge straight PowerLink cable, with ferrite, black
52-52559*x*-N-3-FR	USB direct cable, with ferrite, black
52-52559*x*-3-FR	USB straight PowerLink cable, with ferrite, black

Other items may be ordered for the specific protocol being used. To order additional items, contact the dealer, distributor, or contact a customer service representative

Scanner Components

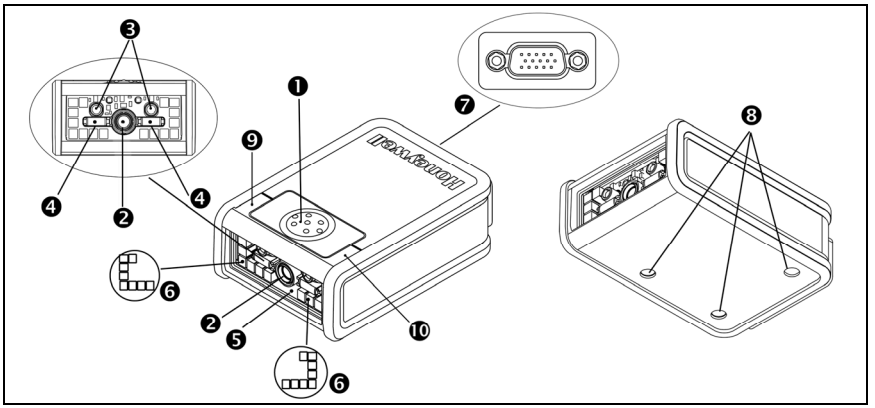


Figure 1. Scanner Components

Item No.	Description
❶	Button
❷	Camera Imager
❸	Infrared Sensor (IR)
❹	Targeting
❺	Window
❻	Area Illumination
❼	Cable Connection (15-pin HD-22 D-type connector)
❽	M3 Mounting Holes
❾	White LED
❿	Blue LED

Maintenance

Smudges and dirt on the unit's window can interfere with the unit's performance. If the window requires cleaning, use only a mild glass cleaner containing no ammonia. When cleaning the window, spray the cleaner onto a lint free, non-abrasive cleaning cloth then gently wipe the window clean.

If the unit's case requires cleaning, use a mild cleaning agent that does not contain strong oxidizing chemicals. Strong cleaning agents may discolor or damage the unit's exterior.

Cable Installation

Important: If the cable is not fully attached, the unit may power intermittently.

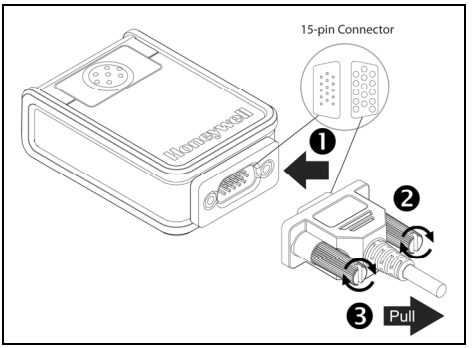


Figure 2. Cable Installation

1. Insert the 15-pin D-type connector end of the cable into the socket on the MS4980.
2. Rotate the two screws clockwise to tighten.
3. Gently pull on the cable strain relief to insure the cable is installed.

Cable Removal

Before removing the cable from the scanner, turn off power on the host system and disconnect the power supply, if applicable.

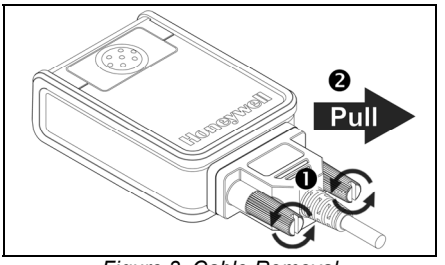


Figure 3. Cable Removal

1. Rotate the two screws counter clockwise to loosen the screws.
2. Pull gently on the strain-relief of the cable to remove it from the scanner.

Labels

Every scanner has a label located on the underside of the unit. The label contains important information such as the unit's date of manufacture, serial number, CE and caution information. Figure 4 provides an example of the label.

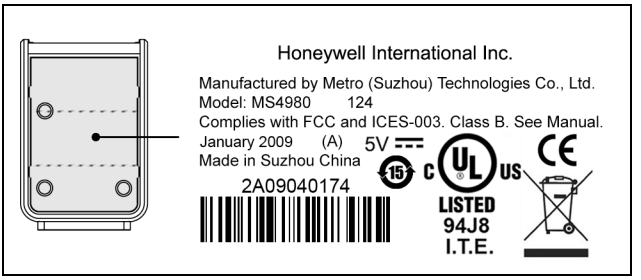


Figure 4 . Label Example

Caution: To maintain compliance with applicable standards, all circuits connected to the imager must meet the requirements for SELV (Safety Extra Low Voltage) according to EN/IEC 60950-1.

To maintain compliance with standard CSA C22.2 No. 60950-1/UL 60950-1 and norm EN/IEC 60950-1, the power source should meet applicable performance requirements for a limited power source.

RS232 Cable Label

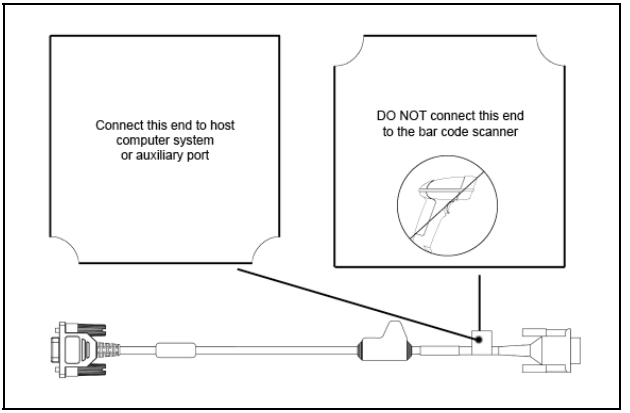


Figure 5. RS232 Cable Label

Installation

RS232

1. Turn off the host device.
2. Plug the 15-pin socket end of the cable into the 15-pin D-Type connector on the MS4980 (see page 4).
3. Connect the 9-pin D-type connector of the communication cable to the proper COM port of the host device.
4. Plug the power supply into the power jack on the PowerLink cable.
5. Check the AC input requirements of the power supply to verify the voltage matches the AC outlet. The outlet must be located near the equipment and be easily accessible.
6. Connect AC power to the transformer.

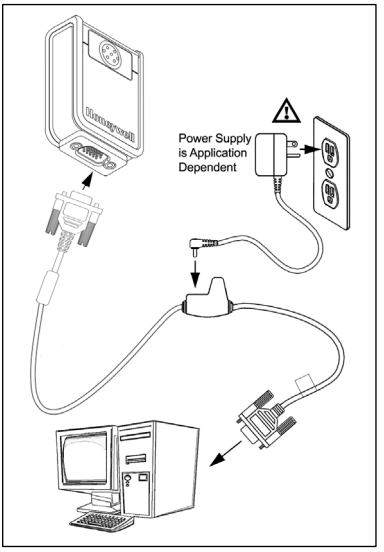


Figure 6.

7. The MS4980 will start to initialize. The white and blue LED will alternately fade on and off for approximately three seconds. When the scanner has finished initializing, the unit will flash the white LED three times while simultaneously beeping three times. The low intensity blue LED will remain turned on.
8. Turn on the host device.

Installation Note

Plugging the scanner into a port on the host system does not guarantee that scanned information will be communicated properly to the host system. Please refer to the MetroSelect Single-Line Configuration Guide or MetroSet2's help files for instructions on changing the scanner's factory default configuration. The scanner and host system must use the same communication protocols.

See caution on page 5.

Keyboard Wedge

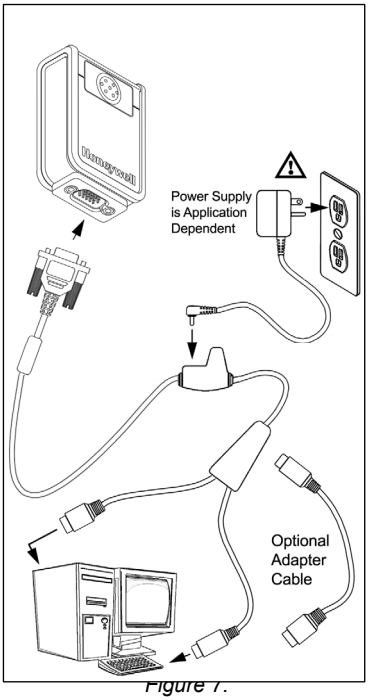


Figure 7.

1. Turn off the host device.
2. Plug the 15-pin socket end of the cable into the 15-pin D-Type connector on the MS4980 (see page 4).
3. Disconnect the keyboard from the host device.
4. Connect the “Y” ends of the communication cable to the keyboard and keyboard port on the host device. If necessary, use the male/female adapter cable supplied with the scanner for proper connections.
5. Plug the power supply into the power jack on the PowerLink cable.
6. Check the AC input requirements of the power supply to verify the voltage matches the AC outlet. The outlet must be located near the equipment and be easily accessible.
7. Connect AC power to the transformer.
8. The MS4980 will start to initialize. The white and blue LED will alternately fade on and off for approximately three seconds. When the scanner has finished initializing, the unit will flash the white LED three times while simultaneously beeping three times. The low intensity blue LED will remain turned on.
9. Turn on the host device. The scanner will automatically reboot after host device is turned on.

Important Note

Plugging the scanner into a port on the host system does not guarantee that scanned information will be communicated properly to the host system. Please refer to the MetroSelect Single-Line Configuration Guide or MetroSet2’s help files for instructions on changing the scanner’s factory default configuration. The scanner and host system must use the same communication protocols.

See caution on page 5.

USB (Powered by the Host Device)

1. Turn off the host device.
2. Plug the 15-pin socket end of the USB cable into the 15-pin D-Type connector on the MS4980 (see page 4).
3. Plug the USB end of the cable into the host's USB port.
4. Turn on the host device.
5. The MS4980 will start to initialize. The white and blue LED will alternately fade on and off for approximately three seconds. When the scanner has finished initializing, the unit will flash the white LED three times while simultaneously beeping three times. The low intensity blue LED will remain turned on. The scanner will automatically reboot after first initialization.

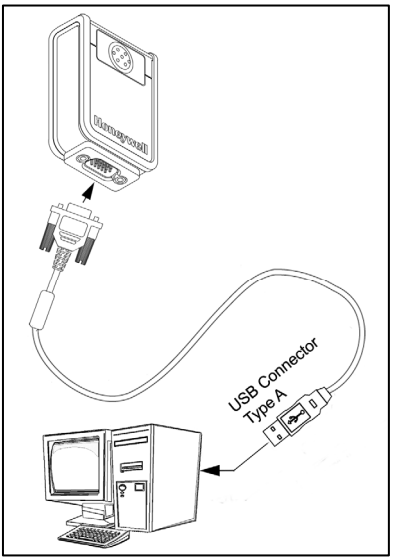


Figure 8.

Installation Note

Plugging the scanner into a port on the host system does not guarantee that scanned information will be communicated properly to the host system. Please refer to the MetroSelect Single-Line Configuration Guide or MetroSet2's help files for instructions on changing the scanner's factory default configuration. The scanner and host system must use the same communication protocols.

See caution on page 5.

USB (Powered by External Power Supply)

1. Turn off the host device.
2. Plug the 15-pin socket end of the cable into the 15-pin D-Type connector on the MS4980 (see page 4).
3. Plug the USB end of the cable into the host's USB port.
4. Plug the power supply into the power jack on the PowerLink cable.
5. Check the AC input requirements of the power supply to verify the voltage matches the AC outlet. The outlet must be located near the equipment and be easily accessible.
6. Connect AC power to the transformer.
7. The MS4980 will start to initialize. The white and blue LED will alternately fade on and off for approximately three seconds. When the scanner has finished initializing, the unit will flash the white LED three times while simultaneously beeping three times. The low intensity blue LED will remain turned on.

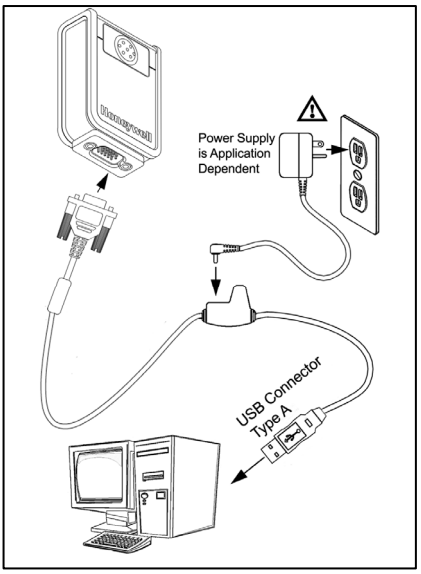


Figure 9.

8. Turn on the host device. The scanner will automatically reboot after host device is turned on.

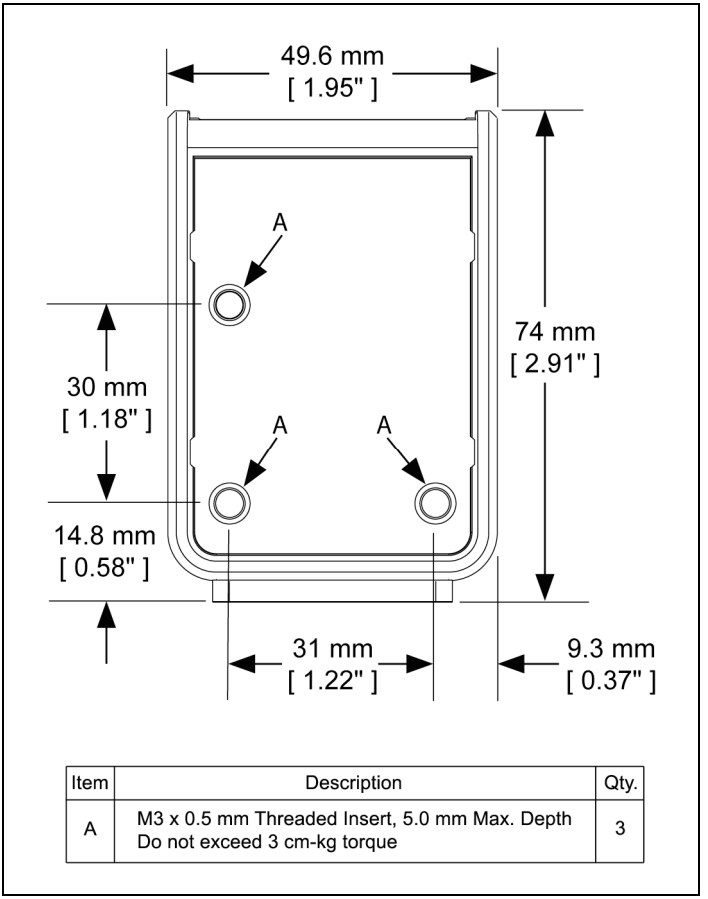
Installation Note

Plugging the scanner into a port on the host system does not guarantee that scanned information will be communicated properly to the host system. Please refer to the MetroSelect Single-Line Configuration Guide or MetroSet2's help files for instructions on changing the scanner's factory default configuration. The scanner and host system must use the same communication protocols.

See caution on page 5.

Mounting Specifications

The MS4980 has three M3 x 0.5 mm threaded inserts on the bottom of the scanner for mounting with screws.



Item	Description	Qty.
A	M3 x 0.5 mm Threaded Insert, 5.0 mm Max. Depth Do not exceed 3 cm-kg torque	3

Figure 10.

Operation

Modes of Operation

The MS4980 supports two standard modes of operation for scanning bar codes, automatic activation and manual activation scanning. Scanning while in the automatic activation mode can occur in either one of two configurable options, pass-through◆ or presentation. Both the pass-through and the presentation options are enabled by default.◆◆ With the default configuration, the scanner operates in the pass-through state for 300 ms and then changes to the presentation state for additional decoding capability.

Automatic Activation Mode

Pass-through Scanning◆ - Decodes ONLY 1D and PDF bar codes

Scanning Method:

1. Pass the bar code through the active scan area to scan, decode and send data

Presentation Scanning - Decodes ALL 1D, PDF and 2D matrix codes

Scanning Method:

1. Place the object in the IR activation range
2. Hold the object's bar code in front of the scan window within the active scan area to scan, decode and send data

◆ *The MS4980 requires a stand-alone 5V power supply for pass-through capabilities to function.*

◆◆ *Default configuration recommended for optimum scan performance.*

Manual Activation◈

Decodes ALL 1D, PDF and 2D matrix codes◈◈

Scanning Method:

1. Press the button one time to activate linear targeting.
2. Align the linear targeting line over the desired bar code.

   Note: When scanning 1D programming bar codes, the bar code must be presented to the scanner in the correct orientation, see Figure 11. PDF and 2D matrix codes may be presented in any orientation.

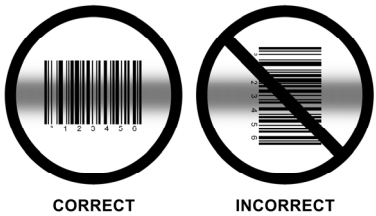


Figure 11. 1D Programming Bar Code Orientation

3. Press the button a second time to decode and send the data.
4. The unit will return to the default presentation mode either by the default time length or by double clicking the button.

Note: Decoding and functional capability of the unit is restricted through the use of license numbers provided by Honeywell. Units will not support key features such as, but not limited to, the ability to decode PDF, 2D or OCR fonts without the proper licenses. Desired licenses can be specified at the time of sale or call a customer service representative for more information. Standard models ship with the ability to read all 1D, PDF and 2D bar codes. OCR fonts are disabled by default and must be specifically requested at an additional cost.

◈ *Scanner configuration bar codes require the manual activation mode.*

◈◈ *2D matrix bar code types are not enabled by default in the manual activation mode. Refer to the Area-Imaging Supplemental Configuration Guide (see page 2) for additional information on enabling code types.*

Audible Indicators

When the MS4980 is in operation, it provides audible feedback. These sounds indicate the status of the scanner. Eight settings are available for the tone of the beep (normal, six alternate tones and no tone). To change the tone, refer to the MetroSelect Single-Line Configuration Guide, PN 00-02544, or MetroSet2's help files.

One Beep

When the scanner successfully reads a bar code the unit will beep once and the white LED will flash once indicating data has been transmitted successfully. The blue LED will return to the low intensity state if no other objects are presented in the active scan area.

If the scanner does not beep once and the white light does not flash, then the bar code has not been successfully read.

Short Razzberry Tone

This tone is a failure indicator (see Failure Modes on page 17).

Long Razzberry Tone

This tone is a failure indicator (see Failure Modes on page 17).

Three Beeps – At Power Up

When the MS4980 first receives power, it will start an initialization sequence. The white and blue LEDs will alternately fade on and off for approximately three seconds. When the scanner has finished initializing the white LED will flash three times while simultaneously beeping three times to indicate the scanner is ready for use.

Three Beeps – Configuration Mode

When entering configuration mode, the white LED will flash while the scanner simultaneously beeps three times. The white and blue LEDs will continue to flash while in this mode. Upon exiting configuration mode, the scanner will beep three times, and the LEDs will stop flashing.

When configured, three beeps can also indicate a communications timeout during normal scanning mode.

When using single-code-configuring, the scanner will beep three times: a normal tone followed by a short pause, a high tone and then a low tone. This indicates that the single configuration bar code has successfully configured the scanner.

Visual Indicators

The scanner has blue and white LED indicators on either side of the button on the top of the unit. When the scanner is on, the intensity of the LED and the flashing or stationary activity of the LEDs, indicates the status of the current scan and the diagnostic scanner.

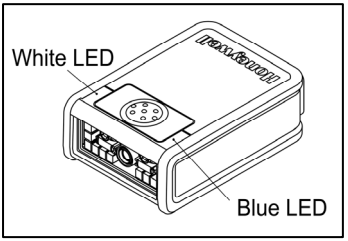


Figure 12.

No LEDs are Illuminated

The LEDs will not be illuminated if the scanner is not receiving power from the host or transformer.

Steady Low Intensity Blue

The scanner is in stand-by mode. Present a bar code to the scanner and the blue LED will switch to a high intensity blue when the IR detects the object.

Steady High Intensity Blue

The high intensity blue LED is illuminated when the scanner is active and attempting to decode a bar code.

Single White Flash

When the scanner successfully reads a bar code the unit will beep once and the white LED will flash once indicating data has been transmitted successfully. The blue LED will return to the low intensity state if no other objects are presented in the active scan area.

If the scanner does not beep once and the white light does not flash, then the bar code has not been successfully read.

Steady White

When the scanner successfully reads a bar code, it will beep once and the white LED will turn on indicating data is being transmitted.

Note: After a successful scan, the scanner transmits the data to the host device. Some communication modes require that the host inform the scanner when data is ready to be received. If the host is not ready to accept the information, the scanner's white LED will remain on until the data can be transmitted.

Alternating Flashing of Blue and White

This indicates the scanner is in configuration mode. A short razzberry tone indicates that an invalid bar code has been scanned while in this mode.

Failure Modes

Long Razzberry Tone – During Power Up

Failed to initialize or configure the scanner. If the scanner does not respond after reconfiguration, return the scanner for repair.

Short Razzberry Tone – During Scanning

An Invalid bar code has been scanned when in configuration mode.

Field of View

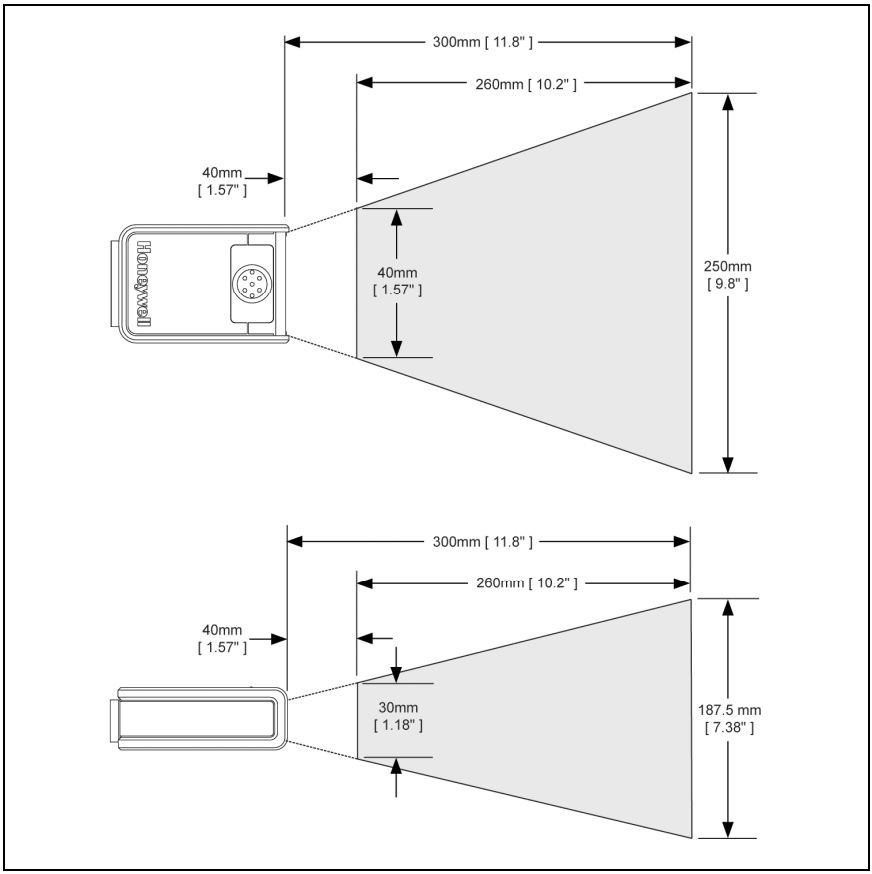
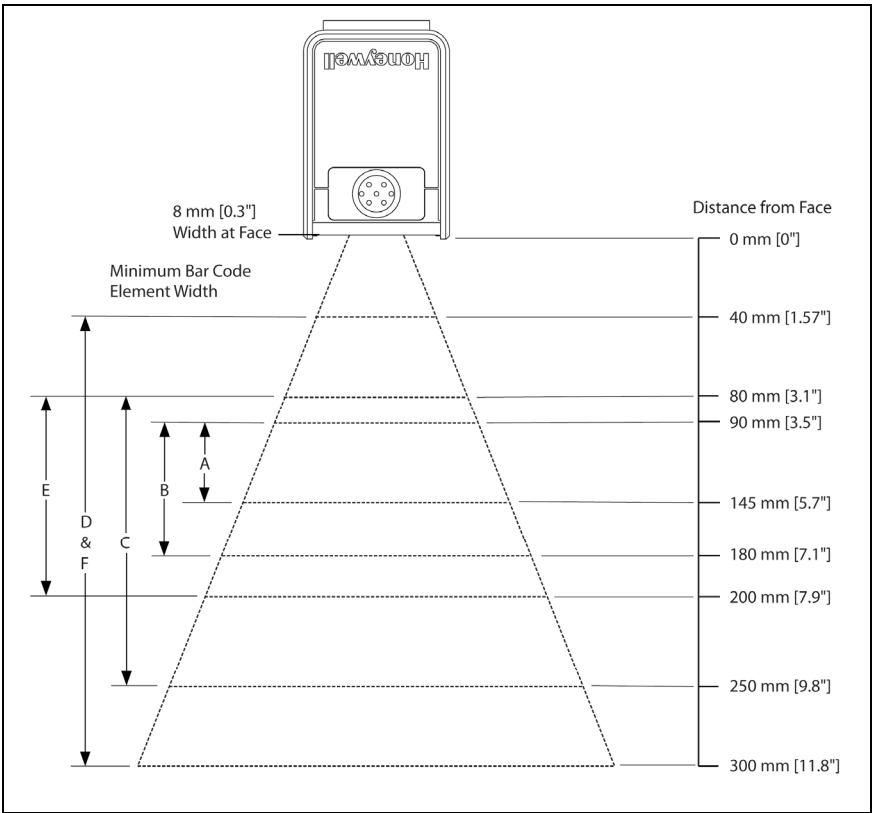


Figure 13. MS4980 Field of View

Specifications are subject to can without notice.

Depth of Field



Minimum Bar Code Element Width						
	1D				PDF	
	A	B	C	D	E	F
mm	.132	.190	.264	.330	.190	.381
mils	5.2	7.5	10.4	13	7.5	15

Figure 14. Depth of Field

Note: Standard models ship with the ability to read all 1D, PDF and 2D bar codes. Decoding and functional capability is limited and units will not support key features including, but not limited to, the ability to decode PDF, 2D or OCR fonts without proper limited use licenses provided by Honeywell. If you wish to purchase a limited license for one or more of the key features not included in the standard unit, please specify at the time of sale or otherwise contact a customer service representative for more information.

Specifications are subject to can without notice.

IR Activation Range

The MS4980 scanner has a built in object detection sensor that instantly turns on the scanner when an object is presented within the scanner's IR activation area.

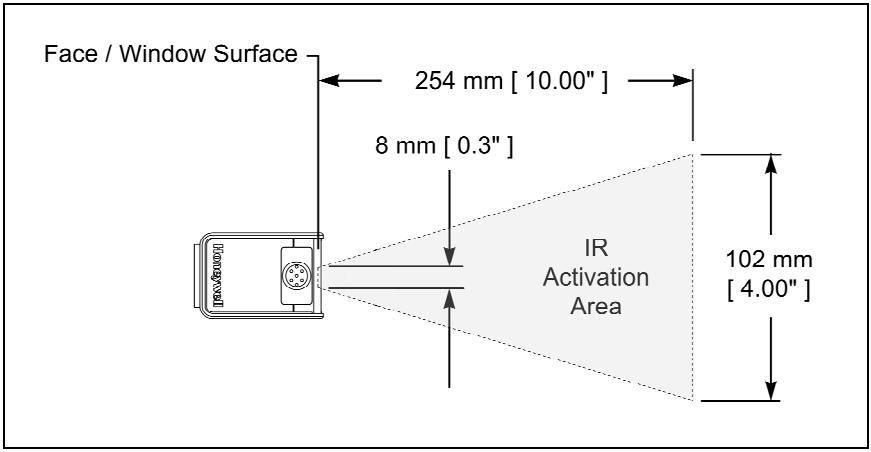


Figure 15. IR Activation Area

Specifications are subject to can without notice.

Troubleshooting Guide

The following guide is for reference purposes only. Contact a customer service representative to preserve the limited warranty terms, see page 45.

All Interfaces

Symptoms	Possible Causes	Solution
No LEDs, beep or illumination.	No power is being supplied to the scanner.	Check transformer, outlet and power strip. Make sure the cable is plugged into the scanner.
	No power is being supplied to the scanner from the host.	Some host systems cannot supply enough current to power the MS4980. A power supply may be required.
Long Razz tone on power up.	There has been a scanner configuration failure.	Contact a customer service representative if the unit will not hold the saved configuration.
	There has been a diagnostic failure.	Contact a customer service representative if the unit will not function.
Long Razz tone when exiting configuration mode.	There was a failure saving the new configuration.	Re-try to configure the scanner. Contact a customer service representative if the unit will not hold the saved configuration.
Long Razz tone.	There was a scanning mechanism failure.	Contact a customer service representative.
Short Razz tone in configuration mode.	An invalid bar code has been scanned.	Scan a valid bar code or quit configuration mode.

Symptoms	Possible Causes	Solution
The unit powers up, but does not beep when bar code is scanned.	The beeper is disabled and no tone is selected.	Enable the beeper and select a tone.
The unit powers up, but does not scan and/or beep.	The bar code symbology trying to be scanned is not enabled.	UPC/EAN, Code 39, interleaved 2 of 5, Code 93, Code 128, Codabar and PDF are enabled by default. Verify that the type of bar code being read has been selected.
The unit powers up, but does not scan and/or beep.	The scanner is trying to scan a bar code that does not match the configured criteria.	Verify that the bar code being scanned falls into the configured criteria (i.e. character length lock or minimum bar code length settings).
The following item is only relevant for RS232 and Serial USB Interfaces.		
The unit scans a bar code, but locks up after the first scan and the white LED stays on.	The scanner is configured to support some form of host handshaking but is not receiving the signal.	If the scanner is setup to support ACK/NAK, RTS/CTS, or XON/XOFF, verify that the host cable and host are supporting the handshaking properly.
The unit scans, but the data transmitted to the host is incorrect.	The scanner's data format does not match the host system requirements.	Verify that the scanner's data format matches that required by the host. Make sure that the scanner is connected to the proper host port.

Symptoms	Possible Causes	Solution
The unit beeps at some bar codes and NOT for others of the same bar code symbology.	The bar code may have been printed incorrectly.	Check if it is a check digit/character/or border problem.
	The scanner is not configured correctly for this type of bar code.	Check if check digits are set properly.
	The minimum symbol length setting does not work with the bar code.	Check if the correct minimum symbol length is set.
The unit scans the bar code but there is no data.	The configuration is not set correctly.	Make sure the scanner is configured for the appropriate mode.
The next four items are only relevant for a Keyboard Wedge interface.		
The unit scans but the data is not correct.	The configuration is not set correctly.	Make sure that the proper PC type AT or PS2 is selected. Verify correct country code and data formatting are selected. Adjust inter-character delay symptom.
The unit is transmitting each character twice.	The configuration is not set correctly.	Increase interscan code delay setting. Adjust whether the F0 break is transmitted. It may be necessary to try this in both settings.
Alpha characters show as lower case.	The computer is in Caps Lock mode.	Enable Caps Lock detect setting of the scanner to detect if the PC is operating in Caps Lock.
Everything works except for a couple of characters.	These characters may not be supported by that country's key look up table.	Try operating the scanner in Alt mode.

Symptoms	Possible Causes	Solution
The unit scans but the data is not correct.	The scanner and host may not be configured for the same interface parameters.	Check that the scanner and the host are configured for the same interface parameters.
The following item is only relevant for an RS232 interface.		
The unit powers up OK and scans OK but does not communicate properly with the host.	The com port at the host is not working or not configured properly.	Check to make sure that the baud rate and parity of the scanner and the communication port match and the program is looking for "RS232" data.
The unit powers up OK and scans OK but does not communicate properly with the host.	The cable is not connected to the correct COM port.	Check to make sure that the cable is connected to the correct COM port.
Characters are being dropped.	Inter-character delay needs to be added to the transmitted output.	Add some inter-character delay to the transmitted output by using the Configuration Guides (PN 00-02544 and 00-05252).
The following item is only relevant for a USB interface.		
No LEDs, beep or illumination.	The USB host may not be active. The MS4980 will not operate from hub/host power without host communication.	Turn on the host device.
	The unit is not receiving sufficient power to support operation. *Refer to the electrical specifications on page 26.*	Verify adequate power is being supplied to the scanner.

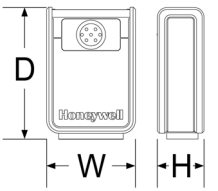
Design Specifications

Operational

Light Source:	LED 645 nm ± 7.5 nm	
Pulse Duration:	Up to 4 mS (Default)	
Maximum Output of LED:	2.63 mW	
Depth of Scan Field:	40 mm – 300 mm (1.57" – 11.8") for 0.33 mm (13 mil)	
Field of View:	40 mm x 30 mm (1.57" x 1.18") @ 40mm (1.57") from Face	
	250 mm x 187.5 mm (9.84" x 7.38") @ 300 mm (11.8") from Face	
Minimum Element Width:	1D	0.127 mm (5 mil)
	2D	0.19 mm (7.5 mil)
Resolution:	1280 x 960 Pixels	
Infrared Activation Range:	0 mm (0") face to 254 mm (10")	
Optional Decode and Imaging Capabilities:	Autodiscriminates all Standard 1-D, GS1 DataBar, PDF417, microPDF, MaxiCode, Data Matrix, QR Code, UCC, EAN Composites, Postals, Aztec (*Image Transfer*) – BMP, TIFF, or JPEG output on USB and RS232 Interfaces	
System Interfaces:	Keyboard Wedge, RS232, USB	
Print Contrast:	20% Minimum Reflectance Difference	
Number Characters Read:	4096 Bytes Maximum	
Beeper Operation:	7 tones or no beep	
Indicators (LED) *Default Settings:*	High Intensity Blue	The unit is active and attempting to scan
	Low Intensity Blue	The unit is idle
	White	Good Read

Mechanical

Depth (D):	74 mm (2.91")
Width (W):	50 mm (1.97")
Height (H):	26 mm (1.02")
Weight:	70 g (2.5 oz.)



Specifications are subject to change without notice.

Electrical

Input Voltage:	5.2 VDC ± 0.25V		
		RS232, USB w/Power Jack, Keyboard Wedge	USB Host Powered
Power:	Peak◆	2.1 W (Typical)	1.9 W (Typical)
	Operating	1.7 W (Typical)	1.7 W (Typical)
	Idle	1.2 W (Typical)	1.2 W (Typical)
Current:	Peak◆	398 mA (Typical)	360 mA (Typical)
	Operating	331 mA (Typical)	317 mA (Typical)
	Idle	230 mA (Typical)	230 mA (Typical)
	◆ Peak Values of at least 1 ms in width.		
DC Transformers:	Class II: 5.2VDC @ 1 A		
For Regulatory Compliance Information see pages 37 – 40.			

Environmental

Temperature:	Operating = 0°C to 40° (32° to 104°F)
	Storage = -20°C to 70°C (-4°F to 158°F)
Humidity:	5% to 95% relative humidity, non-condensing
Light Levels:	Up to 100,000 Lux (9,290 footcandles)
Shock:	Designed to withstand 1.5 m (5 ft.) drops
Contaminants:	Sealed to resist airborne particulate contaminants
Ventilation:	None required

Specifications are subject to change without notice.

Applications and Protocols

The model number on each scanner includes the scanner number.

Scanner	Version Identifier	Communication Protocol(s)
MS4980	124	Interfaces supported include: • RS232 (TXD, RXD, RTS, CTS) • Keyboard Wedge • USB◆
◆ *USB is configurable for Keyboard Emulation Mode, Bi-Directional Serial Emulation Mode or IBM OEM. The default USB setting is Keyboard Emulation Mode.*		

The following are the most important selectable options specific to the keyboard wedge.

Keyboard Type

- *AT (includes IBM® PS2 models 50, 55, 60, 80)
- IBM PS2 (includes models 30, 70, 8556)

Keyboard Country Type

- *USA
- Belgian
- French
- German
- Hungarian
- Italian
- Japanese
- Russian Cyrillic
- Slovenian
- Spanish
- Swiss
- Swedish/Finnish
- Turkish
- United Kingdom

* Indicates a default setting. For information on how to change the default settings, refer to the help files in MetroSet2, the MetroSelect Single-Line Configuration Guide or the Area Imaging Supplemental Configuration Guide.

Configuration and Upgrades

Configuration Modes

The MS4980 has three modes of configuration.

- **Bar Codes**
  The MS4980 can be configured by scanning the bar codes included in the MetroSelect Single-Line Configuration Guide or the Area Imaging Supplemental Configuration Guide shipped with the area imager. The manuals are available for download at www.honeywellaidc.com.

- **MetroSet2**
  This user-friendly Windows-based configuration program allows you to simply 'point-and-click' at the desired scanner options. MetroSet2 is available for download at www.honeywellaidc.com.

- **Serial Programming**
  This mode of configuration is ideal for OEM applications. This mode gives the end-user the ability to send a series of commands using the serial port of the host system. The commands are equivalent to the numerical values of the bar codes located in the MetroSelect Single-Line Configuration Guide.

Upgrading the Firmware

The MS4980 scanner is part of Honeywell's line of scanners with flash upgradeable firmware. The upgrade process requires a new firmware file supplied to the customer by a customer service representative and the MetroSet2 software◆. A personal computer running Windows 95 or greater with an available RS232 serial or USB port is required to complete the upgrade.

Note: Do not use the standard cable supplied with Keyboard Wedge MS4980 interface kits for firmware upgrades. If using USB or RS232 for the upgrade process, the standard USB or RS232 cable provided with the scanner can be used.

To upgrade the firmware in the MS4980:

1. For USB: Plug the scanner into a USB port on the host system.
   For RS232: Plug the scanner into a serial communication port on the host system.
2. Start the MetroSet*2* software.
3. Click on the plus sign (+) next to *POS Scanners* to expand the supported scanner list.
4. Choose the MS4980 from the list.
5. Click on the *Configure xxx/4980 Scanner* button.
6. For USB: Select the USB interface.
   For RS232: Select the RS232 interface.
7. Choose *Flash Utility* from the options list located on the left side of the screen.
8. Click on the *Open File* button in the Flash Utility window.
9. Locate and open the flash upgrade file.
10. For RS232 Only: Select the COM port the scanner is connected to on the host system.
11. Verify the settings listed in the Flash Utility window.
12. Click on the *Flash Scanner* button to begin the flash upgrade.
13. A message will appear on the screen when the upgrade is complete.

◆ *MetroSet2 is available for download, at no additional cost, from www.honeywellaidc.com.*

Scanner and Cable Terminations

Scanner Pinout

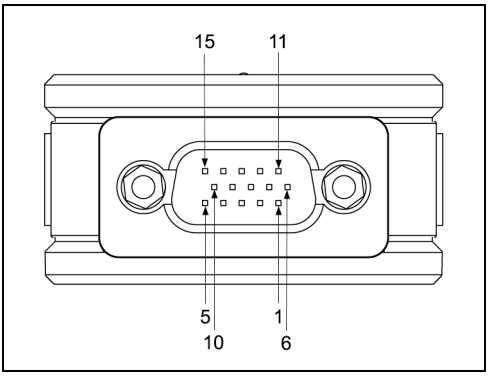


Figure 16.

RS232	
15-pin, D-type	
Pin	**Function**
1	*Reserved*
2	*Reserved*
3	*Reserved*
4	*Reserved*
5	*Reserved*
6	Ground
7	TXD
8	RXD
9	*Reserved*
10	*Reserved*
11	Adapter Power
12	CTS
13	RTS
14	*Reserved*
15	*Reserved*

Keyboard Wedge	
15-pin, D-type	
Pin	**Function**
1	PC Data
2	KB Clock
3	KB Data
4	*Reserved*
5	*Reserved*
6	Ground
7	*Reserved*
8	Jump to Pin 11
9	PC Clock
10	Host Power(+5V)
11	Adapter Power
12	Jump to Pin 10
13	*Reserved*
14	*Reserved*
15	*Reserved*

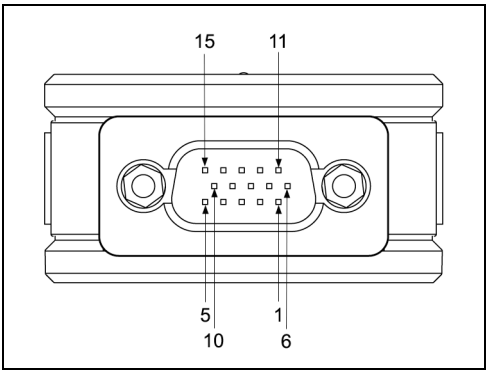


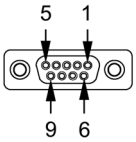
Figure 17.

USB without Power Jack	
15-pin, D-type	
Pin	**Function**
1	*Reserved*
2	*Reserved*
3	*Reserved*
4	USB D-
5	USB D+
6	Ground
7	*Reserved*
8	*Reserved*
9	*Reserved*
10	Host Power(+5V)
11	Jump to Pin 10
12	*Reserved*
13	*Reserved*
14	*Reserved*
15	*Reserved*

USB with Power Jack	
15-pin, D-type	
Pin	**Function**
1	*Reserved*
2	*Reserved*
3	*Reserved*
4	USB D-
5	USB D+
6	Ground
7	*Reserved*
8	Jump to Pin 11
9	*Reserved*
10	Host Power(+5V)
11	Adapter Power
12	*Reserved*
13	*Reserved*
14	*Reserved*
15	*Reserved*

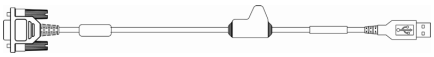
Cable Connector Configurations (Host End)

RS232 PowerLink Cable PN 52-52557x-3	
Pin	**Function**
1	Shield Ground
2	RS232 Transmit Output
3	RS232 Receive Input
4	No Connect
5	Power/Signal Ground
6	Reserved
7	CTS Input
8	RTS Output
9	5VDC Host



9-Pin D-Type Connector

USB PowerLink Cable PN 52-52559*x*-3	
Pin	**Function**
1	PC +5V
2	D-
3	D+
4	Ground
Shield	Shield

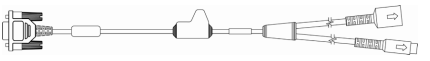


Non-Locking, Type A

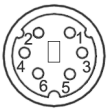
USB Direct Cable PN 52-52559*x*-N-3	
Pin	**Function**
1	+5VDC/Power
2	D-
3	D+
4	Ground

Non-Locking, Type A

Keyboard Wedge PowerLink Cable PN 52-52558x-3	
Pin	**Function**
1	Keyboard Clock
2	Keyboard Data
3	No Connect
4	Power Ground
5	+5 Volts DC
Pin	**Function**
1	PC Data
2	No Connect
3	Power Ground
4	+5 Volts DC
5	PC Clock
6	No Connect



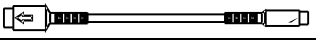
5-Pin DIN, Female

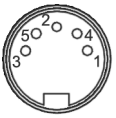


6-Pin DIN, Male

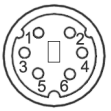
An adapter cable with a 5-pin DIN male connector on one end and a 6-pin mini DIN female connector on the other will be supplied. According to the termination required, connect the appropriate end of the adapter cable to the PowerLink cable, leaving the necessary termination exposed for connecting to the keyboard and the keyboard port on the PC.

Keyboard Wedge Adapter Cable	
Pin	**Function**
1	PC Clock
2	PC Data
3	No Connect
4	Power Ground
5	+5 Volts DC
Pin	**Function**
1	Keyboard Data
2	No Connect
3	Power Ground
4	+5 Volts DC
5	Keyboard Clock
6	No Connect





5-Pin DIN, Male



6-pin Mini DIN, Female

Limited Warranty

Honeywell International Inc. ("HII") warrants its products and optional accessories to be free from defects in materials and workmanship and to conform to HII's published specifications applicable to the products purchased at the time of shipment. This warranty does not cover any HII product which is (i) improperly installed or used; (ii) damaged by accident or negligence, including failure to follow the proper maintenance, service, and cleaning schedule; or (iii) damaged as a result of (A) modification or alteration by the purchaser or other party, (B) excessive voltage or current supplied to or drawn from the interface connections, (C) static electricity or electro-static discharge, (D) operation under conditions beyond the specified operating parameters, or (E) repair or service of the product by anyone other than HII or its authorized representatives.

This warranty shall extend from the time of shipment for the duration published by HII for the product at the time of purchase ("Warranty Period"). Any defective product must be returned (at purchaser's expense) during the Warranty Period to HII factory or authorized service center for inspection. No product will be accepted by HII without a Return Materials Authorization, which may be obtained by contacting HII. In the event that the product is returned to HII or its authorized service center within the Warranty Period and HII determines to its satisfaction that the product is defective due to defects in materials or workmanship, HII, at its sole option, will either repair or replace the product without charge, except for return shipping to HII.

EXCEPT AS MAY BE OTHERWISE PROVIDED BY APPLICABLE LAW, THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER COVENANTS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, ORAL OR WRITTEN, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

HII'S RESPONSIBILITY AND PURCHASER'S EXCLUSIVE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT WITH NEW OR REFURBISHED PARTS. IN NO EVENT SHALL HII BE LIABLE FOR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, AND, IN NO EVENT, SHALL ANY LIABILITY OF HII ARISING IN CONNECTION WITH ANY PRODUCT SOLD HEREUNDER (WHETHER SUCH LIABILITY ARISES FROM A CLAIM BASED ON CONTRACT, WARRANTY, TORT, OR OTHERWISE) EXCEED THE ACTUAL AMOUNT PAID TO HII FOR THE PRODUCT. THESE LIMITATIONS ON LIABILITY SHALL REMAIN IN FULL FORCE AND EFFECT EVEN WHEN HII MAY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH INJURIES, LOSSES, OR DAMAGES. SOME STATES, PROVINCES, OR COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

All provisions of this Limited Warranty are separate and severable, which means that if any provision is held invalid and unenforceable, such determination shall not affect the validity of enforceability of the other provisions hereof. Use of any peripherals not provided by the manufacturer may result in damage not covered by this warranty. This includes but is not limited to: cables, power supplies, cradles, and docking stations. HII extends these warranties only to the first end-users of the products. These warranties are non-transferable.

The duration of the limited warranty for the MS4980 is two (2) year(s). The accessories have a 90 day limited warranty from the date of manufacture.

Regulatory Compliance

Safety

ITE Equipment

IEC 60950-1, EN 60950-1

LED

Class 1 LED Product: IEC 60825-1:1993+A1+A2,
EN 60825-1:1994+A1+A2

⚠ Caution

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. Under no circumstances should the customer attempt to service the LED scanner. Never attempt to look at the LED beam, even if the scanner appears to be nonfunctional. Never open the scanner in an attempt to look into the device. Doing so could result in hazardous radiation exposure. The use of optical instruments with the LED equipment will increase eye hazard.

⚠ Atención

La modificación de los procedimientos, o la utilización de controles o ajustes distintos de los especificados aquí, pueden provocar una exposición de luz brillante peligrosa. Bajo ninguna circunstancia el usuario deberá realizar el mantenimiento del LED (Diodo Emisor de Luz) del lector. Ni intentar mirar al haz del LED incluso cuando este no esté operativo. Tampoco deberá abrir el lector para examinar el aparato. El hacerlo puede conllevar una exposición peligrosa a la luz del LED. El uso de instrumentos ópticos con el equipo LED puede incrementar el riesgo para la vista.

⚠ Attention

L'emploi de commandes, réglages ou procédés autres que ceux décrits ici peut entraîner de graves irradiations. Le client ne doit en aucun cas essayer d'entretenir lui-même le scanner ou la LED. Ne regardez jamais directement le rayon LED, même si vous croyez que le scanner est inactif. N'ouvrez jamais le scanner pour regarder dans l'appareil. Ce faisant, vous vous exposez à un risque d'irradiation. L'emploi d'appareils optiques avec cet équipement à LED augmente le risque d'endommagement de la vision.

⚠ Achtung

Die Verwendung anderer als der hier beschriebenen Steuerungen, Einstellungen oder Verfahren kann eine gefährliche Licht emittierender Dioden strahlung hervorrufen. Der Kunde sollte unter keinen Umständen versuchen, den Licht emittierender Dioden-Scanner selbst zu warten. Sehen Sie niemals in den Licht emittierender Diodenstrahl, selbst wenn Sie glauben, daß der Scanner nicht aktiv ist. Öffnen Sie niemals den Scanner, um in das Gerät hineinzusehen.

Wenn Sie dies tun, können Sie sich einer gefährlichen Licht emittierender Diodenstrahlung aussetzen. Der Einsatz optischer Geräte mit dieser Laserausrüstung erhöht das Risiko einer Sehschädigung.

⚠ Attenzione

L'utilizzo di sistemi di controllo, di regolazioni o di procedimenti diversi da quelli descritti nel presente Manuale può provocare delle rischiose esposizioni radiattive. Il cliente non deve assolutamente tentare di riparare egli stesso lo scanner LED (o diodo emettitore di luce). Non guardate mai il raggio LED (d. emettitore di luce), anche se credete che lo scanner non sia attivo. Non aprite mai lo scanner per guardare dentro l'apparecchio. Facendolo potete esporVi ad una radiazione rischiosa. L'uso di apparecchi ottici, equipaggiati con raggi LED (d. emettitori di luce), aumenta il rischio di danni alla vista.

EMC

Emissions

FCC Part 15, ICES-003, CISPR 22, EN 55022

Immunity

CISPR 24, EN 55024

Note: Immunity performance is not guaranteed for scanner cables greater than 3 meters in length when fully extended.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Class A Devices

The following is applicable when the scanner cable is greater in length than 3 meters (9.8 feet) when fully extended:

Les instructions ci-dessous s'appliquent aux cables de scanner dépassant 3 métres (9.8 pieds) de long en extension maximale:

Folgendes trifft zu, wenn das Scannerkabel länger als 3 Meter ist:

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense. Any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice

This Class A digital apparatus complies with Canadian ICES-003.

Remarque

Cet appareil numérique de classe A est conforme à la norme canadienne NMB-003.

European Standard

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Funkstöreigenschaften nach EN55022:1998

Warnung!

Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen. In diesem Fall kann vom Betreiber verlangt werden, angemessene Massnahmen durchzuführen.

Standard Europeo

Attenzione

Questo e' un prodotto di classe A. Se usato in vicinanza di residenze private potrebbe causare interferenze radio che potrebbero richiedere all'utilizzatore opportune misure.

Attention

Ce produit est de classe "A". Dans un environnement domestique, ce produit peut être la cause d'interférences radio. Dans ce cas l'utiliseteur peut être amené à predre les mesures adéquates.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Class B Devices

The following is applicable when the scanner cable is less than 3 meters (9.8 feet) in length when fully extended:

Les instructions ci-dessous s'appliquent aux cables de scanner ne dépassant pas 3 métres (9.8 pieds) de long en extension maximale:

Folgendes trifft zu, wenn das Scannerkabel kürzer als 3 Meter ist:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Notice

This Class B digital apparatus complies with Canadian ICES-003.

Remarque

Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

Patents

For patent information, please refer to www.honeywellaidc.com/patents.

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Customer Support

Technical Assistance

If you need assistance installing or troubleshooting your device, please call your distributor or the nearest technical support office:

North America/Canada
Telephone: (800) 782-4263
E-mail: hsmnasupport@honeywell.com

Latin America
Telephone: (803) 835-8000
Telephone: (800) 782-4263
E-mail: hsmlasupport@honeywell.com

Brazil
Telephone: +55 (21) 3535-9100
Fax: +55 (21) 3535-9105
E-mail: brsuporte@honeywell.com

Mexico
Telephone: (803) 835-8000
E-mail: latechsupport@honeywell.com

Europe, Middle East, and Africa
Telephone: +31 (0) 40 7999 393
Fax: +31 (0) 40 2425 672
E-mail: hsmeurosupport@honeywell.com

Hong Kong
Telephone: +852-29536436
Fax: +851-2511-3557
E-mail: aptechsupport@honeywell.com

Singapore
Telephone: +65-6842-7155
Fax: +65-6842-7166
E-mail: aptechsupport@honeywell.com

China
Telephone: +86 800 828 2803
Fax: +86-512-6762-2560
E-mail: aptechsupport@honeywell.com

Japan
Telephone: +81-3-3839-8511
Fax: +81-3-3839-8519
E-mail: aptechsupport@honeywell.com

Online Technical Assistance

You can also access technical assistance online at www.honeywellaidc.com.

Product Service and Repair

Honeywell International Inc. provides service for all its products through service centers throughout the world. To obtain warranty or non-warranty service, contact the appropriate location below to obtain a Return Material Authorization number (RMA #) before returning the product.

North America
Telephone: (800) 782-4263
E-mail: hsmnaservice@honeywell.com

Latin America
Telephone: (803) 835-8000
Telephone: (800) 782-4263
Fax: (239) 263-9689
E-mail: laservice@honeywell.com

Brazil
Telephone: +55 (21) 3535-9100
Fax: +55 (21) 3535-9105
E-mail: brservice@honeywell.com

Mexico
Telephone: +52 (55) 5203-2100
Fax: +52 (55) 5531-3672
E-mail: mxservice@honeywell.com

Europe, Middle East, and Africa
Telephone: +31 (0) 40 2901 633
Fax: +31 (0) 40 2901 631
E-mail: euroservice@honeywell.com

Hong Kong
Telephone: +852-29536436
Fax: +851-2511-3557
E-mail: apservice@honeywell.com

Singapore
Telephone: +65-6842-7155
Fax: +65-6842-7166
E-mail: apservice@honeywell.com

China
Telephone: +86 800 828 2803
Fax: +86-512-6762-2560
E-mail: apservice@honeywell.com

Japan
Telephone: +81-3-3839-8511
Fax: +81-3-3839-8519
E-mail: apservice@honeywell.com

Online Product Service and Repair Assistance
You can also access product service and repair assistance online at www.honeywellaidc.com.

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